

AMENDMENTS TO THE CLAIMS:

Please cancel claim 19 without prejudice or disclaimer, and amend the claims as follows:

1. (Currently Amended) A method of thermally treating a magnetic layer of a wafer, comprising:

annealing, for a predetermined short duration, a magnetic layer of a single wafer;

and

applying at least one local magnetic field to said magnetic layer.

2. (Previously Presented) The method of claim 1, wherein said annealing comprises:

heating an entirety of said single wafer.

3. (Previously Presented) The method of claim 1, wherein said annealing comprises:

heating a local area on the single wafer.

4. (Previously Presented) The method of claim 1, wherein said annealing comprises:

heating said magnetic layer within a range of about 300 to about 500 degrees C.

5. (Currently Amended) ~~The method of claim 1, wherein said annealing comprises:~~

A method of thermally treating a magnetic layer of a wafer, comprising:

annealing, for a predetermined short duration, a magnetic layer of a single wafer;

and

heating said magnetic layer for a duration within a range of about 1 second to about 60 seconds in the presence of at magnetic field.

6. (Previously Presented) The method of claim 1, wherein said annealing comprises:

annealing by one of a flash lamp, a laser, a flashlight, a focused heat lamp, and a rapid thermal anneal (RTA) lamp.

7. (Currently Amended) The method of claim 1, ~~further comprising:~~

~~after said annealing,~~ wherein said applying a magnetic field to said magnetic layer is conducted after said annealing.

8. (Previously Presented) The method of claim 7, wherein said applying is performed to align a pinning of the magnetic layer.

9. (Previously Presented) The method of claim 3, wherein said annealing comprises annealing a desired spot on the single wafer, said method further comprising:

performing one of a spot-to-spot processing and a line-to-line processing.

10. (Previously Presented) The method of claim 1, further comprising:

sequentially annealing different areas of the single wafer in different directions.

11. (Currently Amended) A method for processing a magnetic stack, comprising:

annealing a single wafer having a magnetic stack formed thereon, with a predetermined fast anneal in a presence of a magnetic field; and
applying at least one local magnetic field to said magnetic layer.

12. (Previously Presented) The method of claim 11, further comprising:

cooling the single wafer by at least one of cooling liquid, helium, nitrogen, argon, and a vacuum.

13. (Previously Presented) The method of claim 11, further comprising:

annealing only portions of the single wafer at a time.

14. (Previously Presented) The method of claim 11, further comprising:

changing a direction of an applied magnetic field point-by-point.

15. (Currently Amended) ~~The method of claim 11, further comprising:~~

A method for processing a magnetic stack, comprising:

annealing a single wafer having a magnetic stack formed thereon, with a predetermined fast anneal in a presence of a magnetic field; and
annealing multiple separate locations at the same time.

16. (Previously Presented) The method of claim 11, further comprising:

rotating the single wafer and annealing another area of the single wafer in a different direction.

17. (Previously Presented) The method of claim 11, further comprising:

rotating the field and annealing another area of the single wafer in a different direction.

18. (Currently Amended) An apparatus for treating a magnetic layer of a wafer, comprising:

a heating element for annealing, for a predetermined short duration, a magnetic layer on a single wafer; and

a magnet for locally applying a magnetic field to the magnetic layer during said annealing.

19. (Canceled)

20. (Previously Presented) The apparatus according to claim 18, wherein said magnetic field is uniformly applied to said single wafer.

21. (Previously Presented) The apparatus according to claim 18, wherein said heating element comprises one of a rapid thermal anneal (RTA) lamp, a flash lamp, a laser, a flashlight, and a focused heat lamp.

22. (Previously Presented) The apparatus according to claim 18, wherein said heating element performs said annealing within a range of about 300 to about 500°C, and

a preferred duration of holding the single wafer at the predetermined temperature is within a range of about 1 second to about 60 seconds.

23. (Previously Presented) The apparatus according to claim 18, wherein the heating element performs one of heating a point, a line, and multiple points on said single wafer.

24. (Previously Presented) The apparatus according to claim 18, further comprising:
a thermal sensor positioned adjacent a spot on the wafer to be heated.

25. (Previously Presented) The apparatus according to claim 18, wherein annealing by said heating element and magnetic field scanning by said magnet are simultaneously performed.

26. (Previously Presented) The method of claim 11, further comprising:
cooling only portions of the single wafer.

27. (Previously Presented) The apparatus according to claim 18, further comprising:
a cooling element for cooling at least a portion of the single wafer.